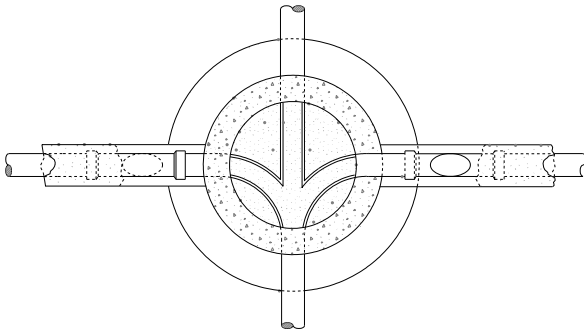


- NOTES:
1. FURNISH AS SHOWN ON PLANS AND/OR AT EACH MANHOLE WHERE SEWER LINE CROSSES OPEN FIELDS
 2. SIGNS TO BE CONSTRUCTED FROM 20 GA. STEEL BAKED ON ENAMEL FINISH. FURNISH ONE SIGN AND ONE POST FOR EACH MANHOLE INSTALLED ACROSS OPEN FIELD AND AT OTHER LOCATIONS AS SHOWN ON PLANS. FURNISH SAME NUMBER OF REPLACEMENT SIGNS AS FOR EACH INSTALLED (OMITTING MANHOLE NUMBER ON MANHOLE SIGN) (NOT A SEPARATE PAY ITEM)
 - 2" BLACK PRESSURE SENSITIVE NUMBERS TO BE ADDED AFTER BASIC SIGN HAS BEEN PAINTED.

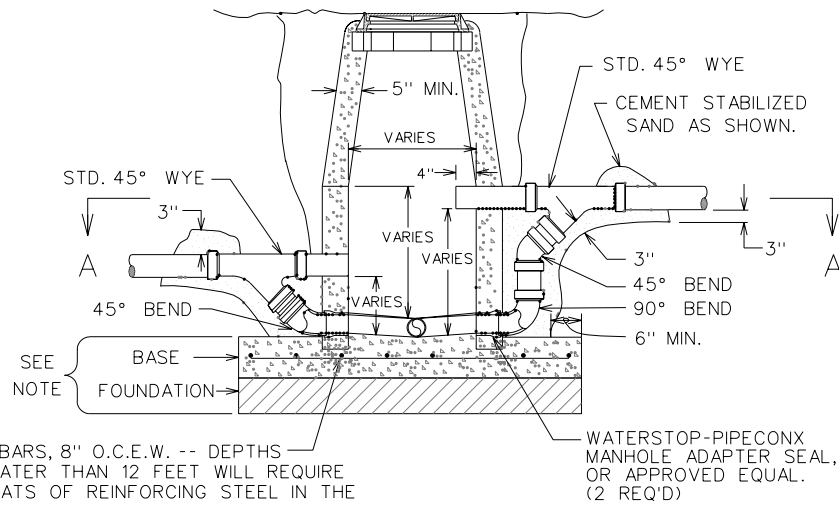
SEWER WARNING AND MANHOLE IDENTIFICATION SIGN

S1-00

NOTE:
MANHOLE BASE SHALL BE PLACED ON FIRM SUBGRADE.
ADDITION OF CEMENT STABILIZED SAND OR GRAVEL
MAY BE REQUIRED TO STABILIZE FOUNDATION.



SECTION A - A

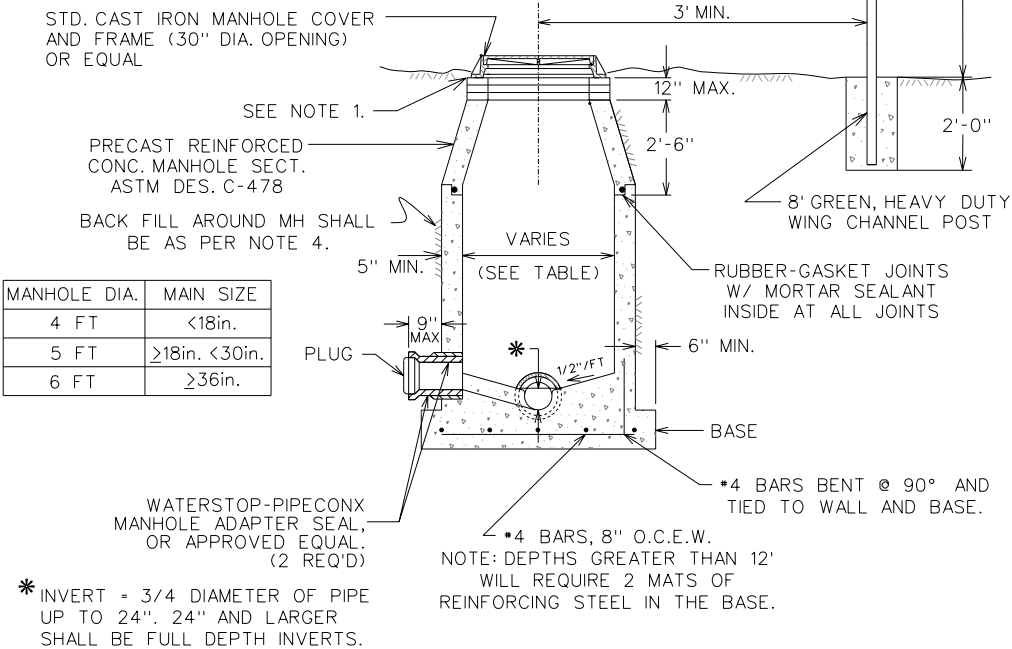


NOTE: CAP CLEAN-OUT AT BLIND FLANGE ON RESTRAINED JOINT FOR FORCE MAINS.

STANDARD DROP MANHOLE

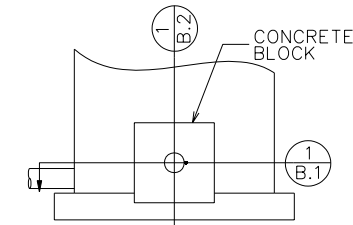
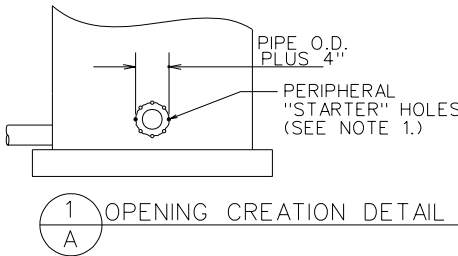
S1-01

- NOTES:
1. A MAX. OF 4 AND A MIN. OF 2 THROAT RINGS SHALL BE USED AT EACH MANHOLE IN NEW OR EXISTING RIGHT-OF-WAY.
 2. USE ADEKA SEALANT OR APPROVED EQUAL BETWEEN RING/COVER, ADJUSTMENT RINGS AND CHIMNEY OR CORBEL/CONE SECTION.
 3. MANHOLE BASE THICKNESS AND FOUNDATION AS FOLLOWS:
MANHOLE DEPTH (FT.) BASE THICKNESS
0 - 12 8"
12 AND OVER 12"
 4. MANHOLE LOCATION AND COMPACTION AS FOLLOWS:
LOCATION COMPACTION REQUIREMENT
PAVEMENT 98 % STANDARD PROCTOR - ASTM D 698
LANDSCAPE AREA 90 % STANDARD PROCTOR - ASTM D 698
 5. NO RINGS ARE REQUIRED OUTSIDE OF STREET RIGHT-OF-WAY
 6. IN FLOODPLAINS, THE CONE SHALL EXTEND ABOVE THE BASE FLOOD ELEVATION OR A BOLT DOWN WATER-TIGHT RING AND COVER SHALL BE USED.
 7. WARNING SIGN ONLY TO BE PLACED WHERE SEWER CROSSES OPEN FIELDS.



STANDARD MANHOLE

S1-02



1 B MANHOLE CONNECTION DETAIL

*3 REBAR (14" LONG) EMBEDDED AND EPOXYED INTO MANHOLE WALL 3". (SEE NOTE 2.)

1 CONNECTION DETAIL SECTION VIEW

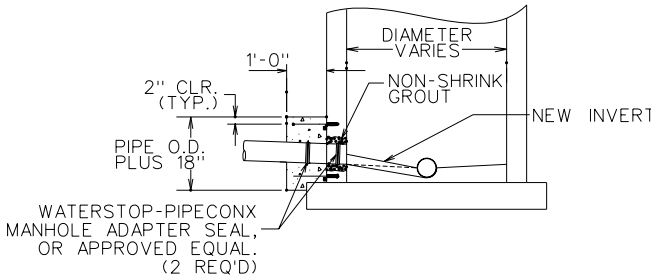
STANDARD MANHOLE TIE-IN

REMOVE INVERT AS REQUIRED AND NEW INVERT FOR NEW LINE. NEW INVERT SHALL HAVE SMOOTH TRANSITION INTO EXISTING INVERT. REWORK EXISTING INVERT AS REQUIRED.

SYNKO-FLEX PREFORMED PLASTIC ADHESIVE WATERSTOP, OR APPROVED EQUAL. (SEE NOTE 3.)

WATERSTOP - PIPECONX MANHOLE ADAPTER SEAL, OR APPROVED EQUAL. (2 REQ'D)

- NOTES:
1. 1" DIA. "STARTER" HOLES SHALL BE DRILLED THROUGH WALL OF EXISTING MANHOLE SPACED 3" APART CENTER TO CENTER. AFTER "STARTER" HOLES HAVE BEEN INSTALLED AND APPROVED BY A CITY INSPECTOR, THE CONTRACTOR SHALL BEGIN REMOVING THE CONCRETE INSIDE THE PERIPHERAL "STARTER" HOLES. CONCRETE SHALL BE REMOVED WITH PNEUMATIC HAND TOOLS.
 2. THE NUMBER OF REBAR DOWELS SHALL VARY WITH SIZE OF OPENING. REBAR SHALL NOT BE SPACED MORE THAN 12" CC.
 3. WATERSTOP SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
 4. CONCRETE SHALL BE 3,000 P.S.I.



1 CONNECTION DETAIL SECTION VIEW

S1-03

REVISIONS:

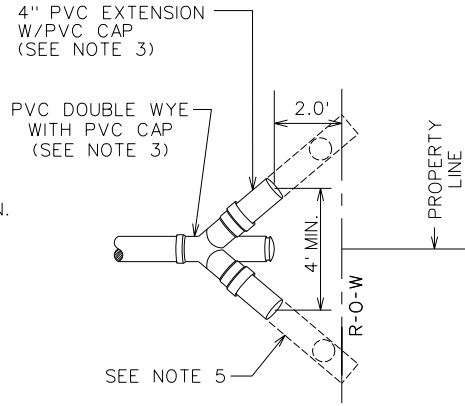
BRYAN - COLLEGE STATION
STANDARD SEWER DETAILS



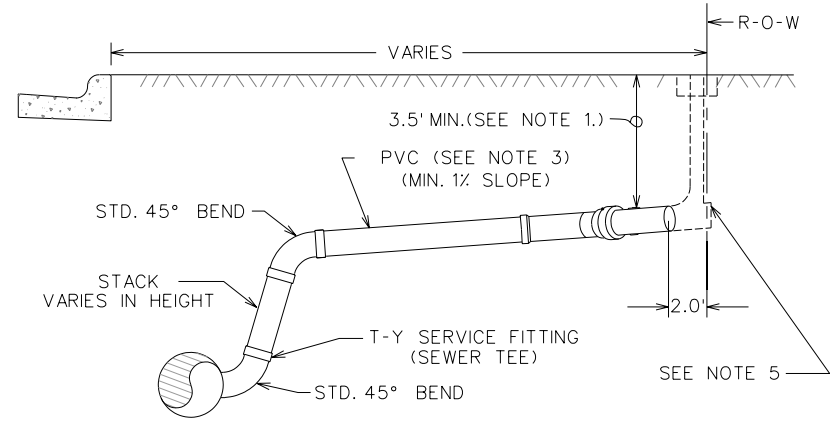
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DATE: 01-01-05
SCALE: N T S
APPROVED: W.P.K.
FIGURE:
S1
SHEET 1 OF 4

NOTE:

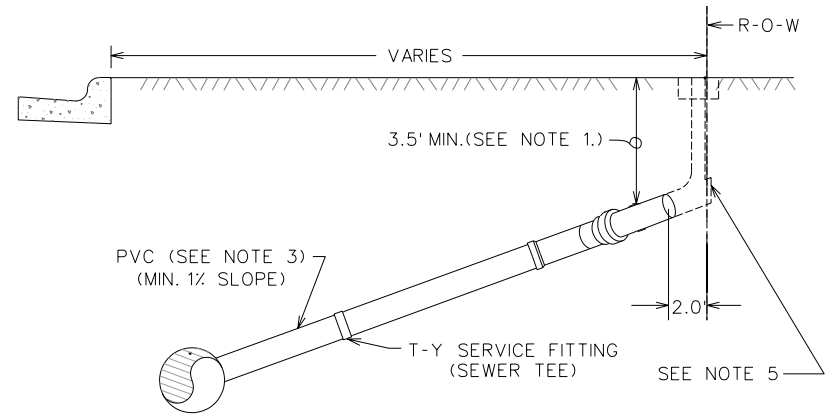
1. WHERE DOUBLE WYE SERVICE ELEVATION IS LESS THAN 2'-7" BELOW PROPOSED BACK OF CURB, MIN. SLAB ELEV. MUST BE SET TO ALLOW SANITARY SEWER SERVICE.
2. MARK EACH SERVICE END WITH METAL "T" POST PAINTED GREEN.
3. ALL MATERIAL SHALL BE SDR 21 D2241.
4. GLUED FITTINGS WILL ONLY BE ALLOWED AT THE DOUBLE WYE CONNECTION AND BENDS. GLUED FITTINGS TO BE PVC-DWV.
5. A CLEAN OUT IS REQUIRED AND WILL BE INSTALLED BY THE PLUMBER AT THE ROW FOR EACH SERVICE.



PLAN



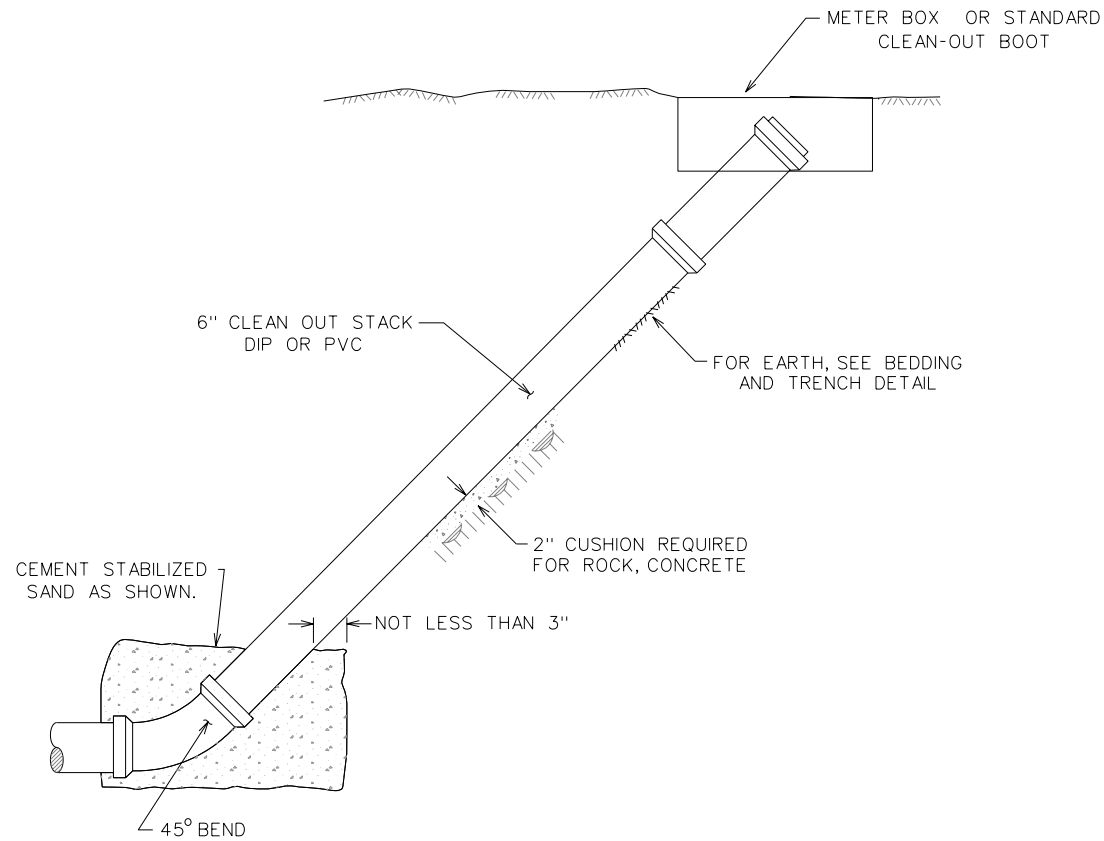
DEEP CONNECTION PROFILE



STANDARD CONNECTION PROFILE

SANITARY SEWER SERVICE CONNECTION

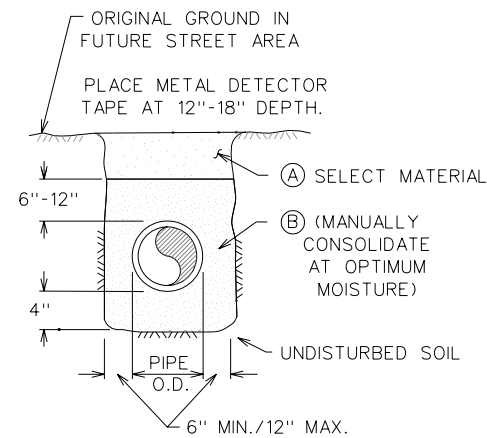
S2-00



STANDARD CLEAN OUT FOR MAIN LINE

S2-01

- Ⓐ SELECT NATIVE MATERIAL
MATERIAL EXCAVATED FROM THE DITCH, (WHICH IS FREE OF ROCKS, LUMPS, CLOUDS, OR DEBRIS LARGER THAN TWO (2) INCHES IN THE LARGEST DIMENSION), COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NON-STRUCTURAL AREAS (ie...YARDS, PASTURES, EASEMENTS) AND TO A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER FUTURE STREET AREAS.
- Ⓑ GRANULAR MATERIAL
MATERIAL SHALL BE BANK RUN RIVER SAND WHICH IS FREE OF DETRIMENTAL QUANTITIES OF CLAY, DEBRIS, OR ORGANIC MATERIAL AND WHICH, WHEN TESTED BY STANDARD LABORATORY METHODS, MEET THE FOLLOWING REQUIREMENTS:
MAXIMUM LIQUID LIMIT _____ 45
MAXIMUM PLASTICITY INDEX _____ 15
MAXIMUM PERCENT PASSING NO. 200 SIEVE _____ 35
MINIMUM PERCENT PASSING 3/4" SIEVE _____ 100
THE MATERIAL SHALL BE FREE FLOWING AND WHEN WET, SHALL NOT ADHERE TO FORM A BALL WHEN PRESSED IN THE HAND. COMPACTED CEMENT STABILIZED SAND, 1-1/2 SACK/CY (PUGMILL ONLY). SPADE BY LIFTS INTO PLACE, TO FILL ALL VOIDS AROUND PIPE. MANUALLY CONSOLIDATE AT OPTIMUM MOISTURE.



NOTES:

1. FOR BEDDING AND TRENCHING WITHIN EXISTING STREET/ STRUCTURAL AREAS SEE DETAILS FOR OPEN CUT STREETS.
2. ALL BEDDING & INSTALLATION OF PVC PIPE SHALL BE IN ACCORDANCE TO ANSI/AWWA STANDARDS FOR PVC PIPE.
3. ALL BEDDING & INSTALLATION OF DUCTILE IRON PIPE SHALL BE IN ACCORDANCE TO ANSI/AWWA C150/A21.50.
4. COMPACTION SHALL BE ATTAINED BY MECHANICAL TAMPING.
5. DUST RESULTING FROM THE CONTRACTOR'S PERFORMANCE OF THE WORK, EITHER INSIDE OR OUTSIDE THE RIGHT OF WAY, SHALL BE CONTROLLED BY THE CONTRACTOR.
6. ALL TRENCHES SHALL BE BACK FILLED AND TEMPORARY PAVING OR PLATING PLACED AT THE END OF EACH WORKING DAY.
7. TWENTY-FOUR (24) HOUR NOTIFICATION TO ENGINEERING IS REQUIRED PRIOR TO COMMENCEMENT OF WORK.

BEDDING AND TRENCH FOR DI PIPE & PVC PIPE

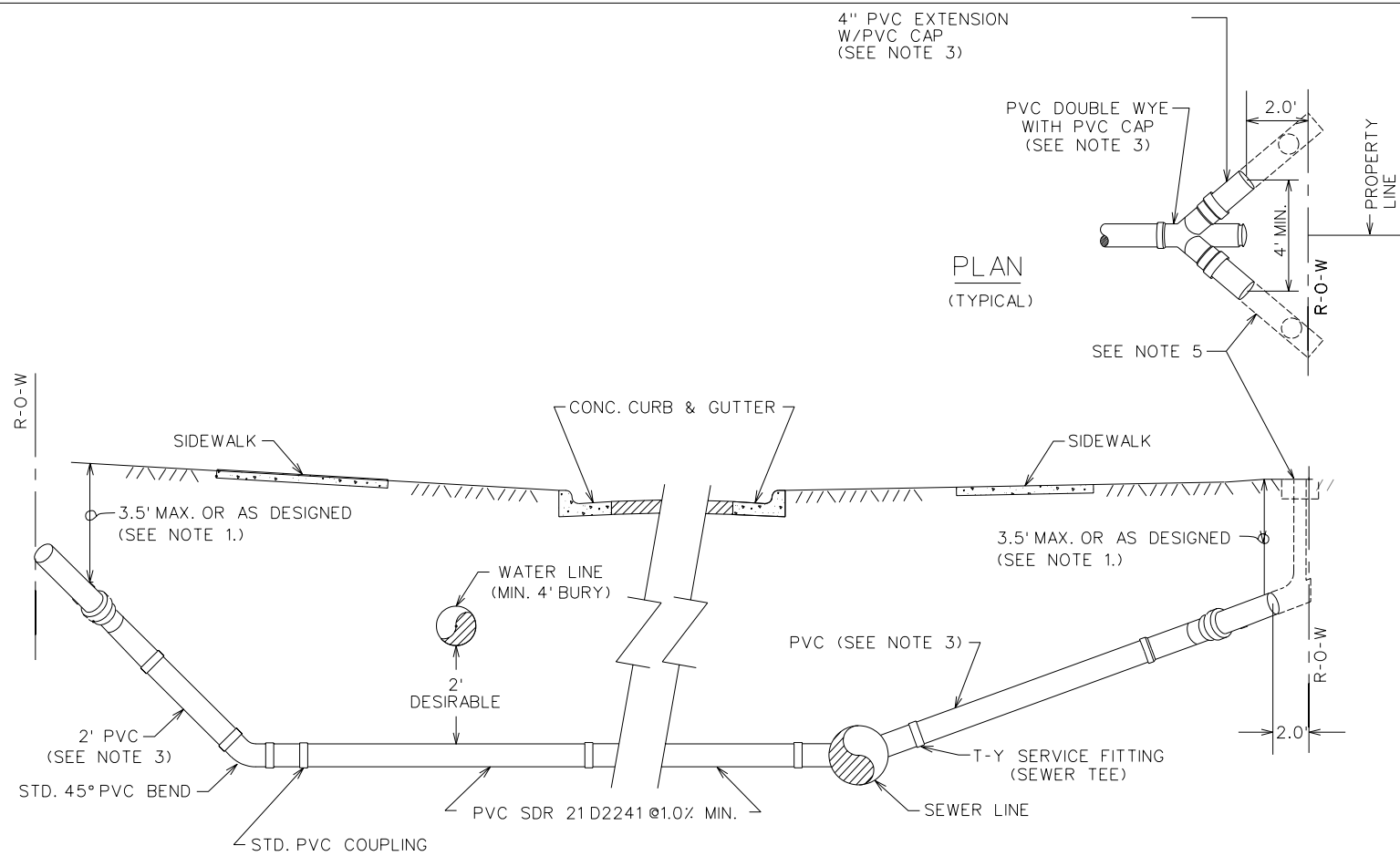
S2-02

REVISIONS:

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STANDARD SEWER DETAILS



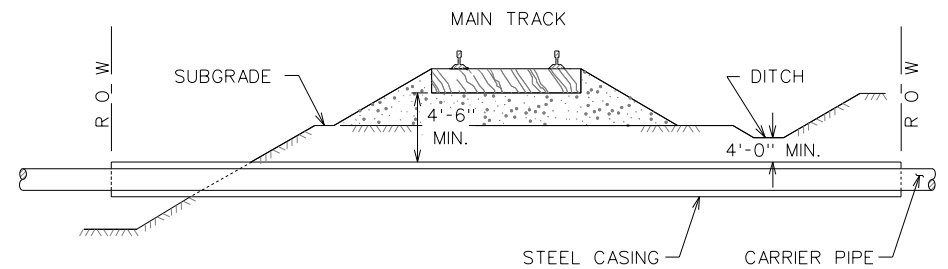
DRAWN BY: *[Signature]*
DATE: 01-01-05
SCALE: N T S
APPROVED: W.P.K.
FIGURE:
S2
SHEET 2 OF 4



- NOTE:
1. WHERE DOUBLE WYE SERVICE ELEVATION IS LESS THAN 2'-7" BELOW PROPOSED BACK OF CURB, MIN. SLAB ELEV. MUST BE SET TO ALLOW SANITARY SEWER SERVICE.
 2. MARK EACH SERVICE END WITH METAL "T" POST PAINTED GREEN.
 3. ALL SERVICE CONNECTIONS WITHIN THE R-O-W SHALL BE SDR 21 D2241 MATERIAL.
 4. ALL SERVICE CONNECTIONS & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.
 5. A CLEAN OUT IS REQUIRED AND WILL BE INSTALLED BY THE PLUMBER AT THE ROW FOR EACH SERVICE.

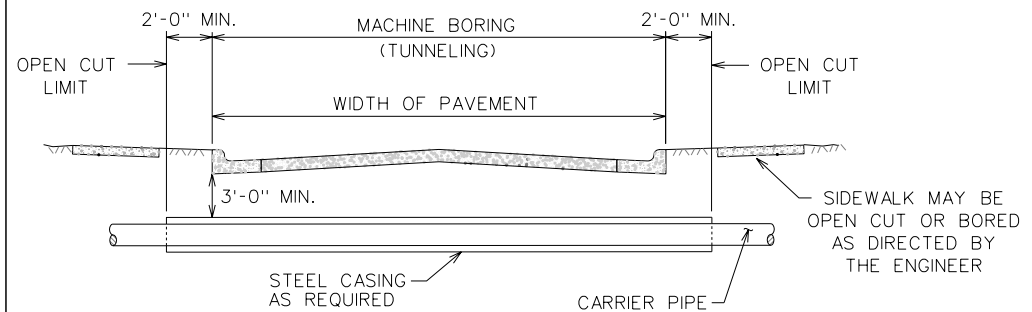
SEWER SERVICE LINE CROSSING

S3-00



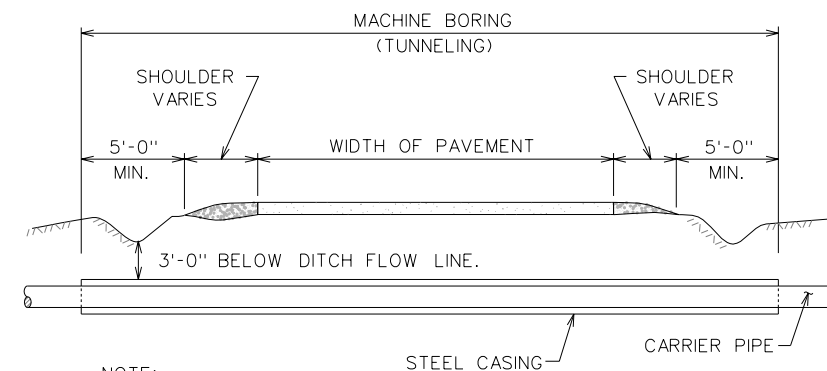
TYPICAL RAILROAD CROSSING

S3-01



TYPICAL CITY STREET CROSSING

S3-02



TYPICAL STATE HIGHWAY OR MAIN THOROUGHFARE CROSSING

S3-03

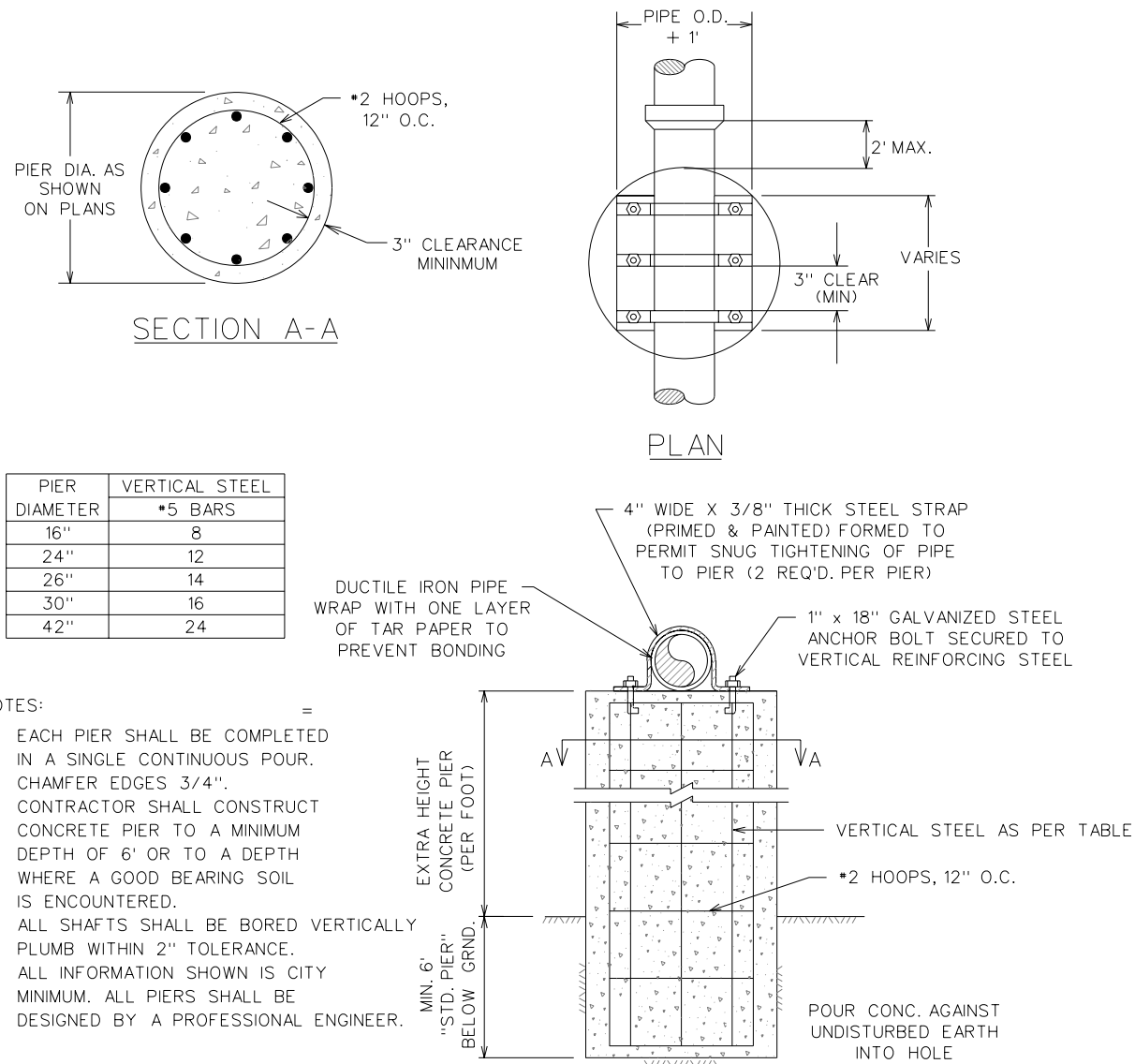
REVISIONS:

BRYAN - COLLEGE STATION
STANDARD SEWER DETAILS



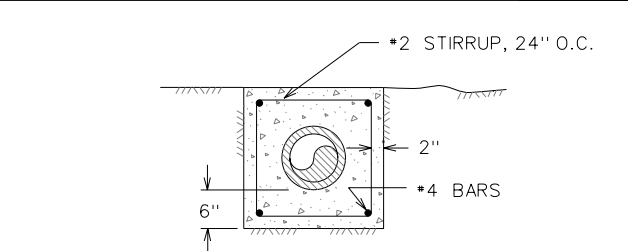
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DATE: 01-01-05
SCALE: N T S
APPROVED: W.P.K.

FIGURE:
S 3
SHEET 3 OF 4



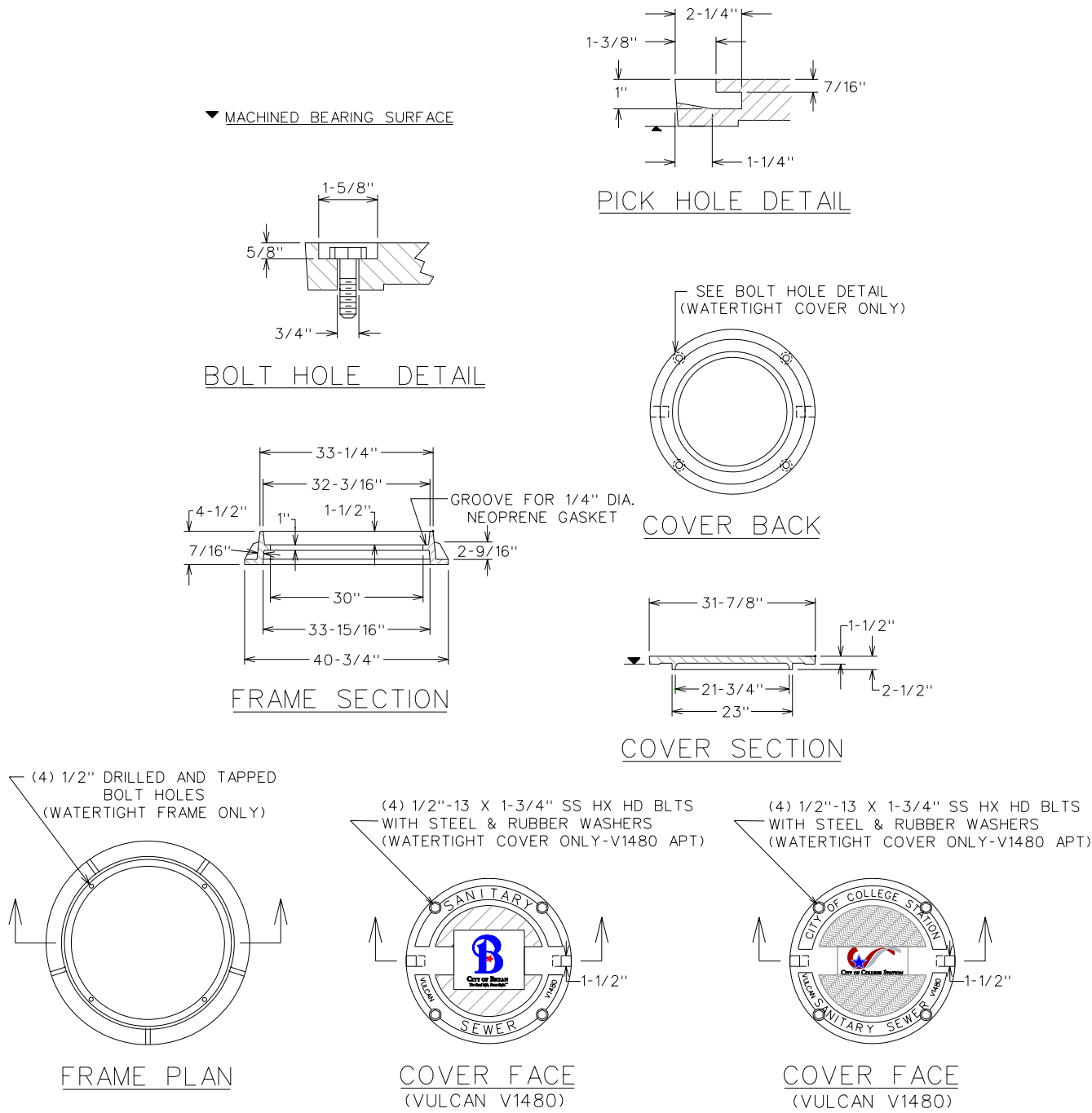
TYPICAL CONCRETE DRILLED PIER
FOR AERIAL SEWER

S4-00



CONCRETE ENCASEMENT

S4-02



S4-01

GENERAL NOTES:

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN. ESTABLISHMENT OF VEGETATION MAY BE A WARRANTY ITEM.

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STANDARD SEWER DETAILS



DRAWN BY: JH
DATE: 01-01-05
SCALE: N T S
APPROVED: W.P.K.
FIGURE:
S4
SHEET 4 OF 4